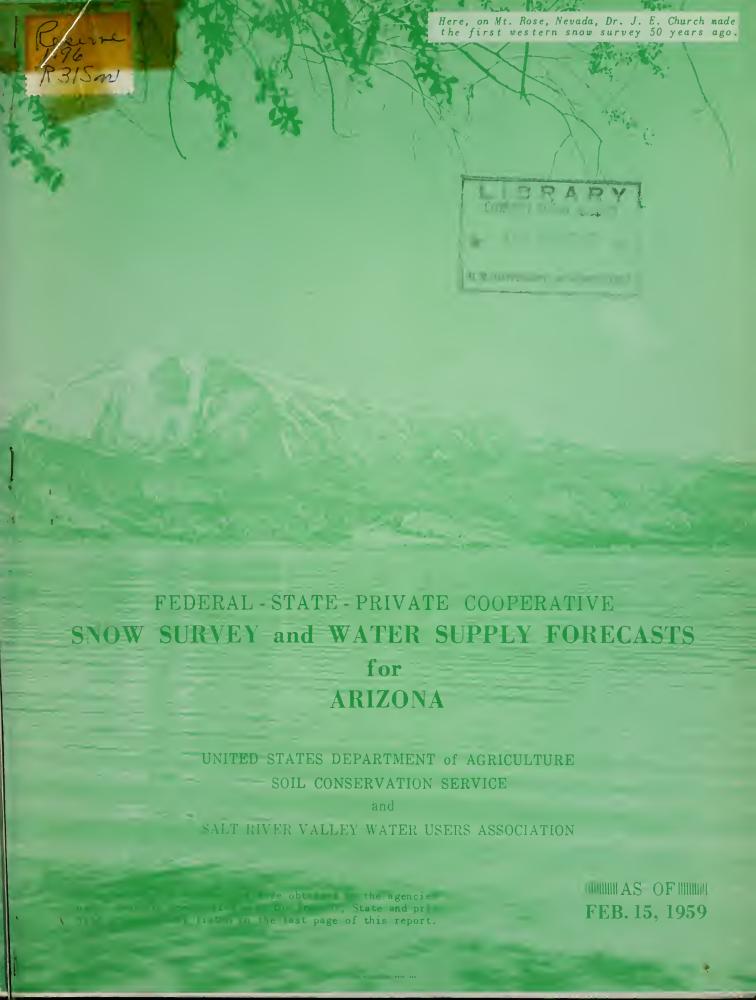
# **Historic, Archive Document**

Do not assume content reflects current scientific knowledge, policies, or practices.





### UNITED STATES DEPARTMENT OF AGRICULTURE - SOIL CONSERVATION SERVICE

TO RECIPIENTS OF COOPERATIVE SNOW SURVEY AND WATER SUPPLY FORECAST REPORTS:

The climate of the cultivated and populated areas of the West is characterized by relatively dry summer months. Such precipitation as occurs falls mostly in the winter and early spring months when it is of little immediate benefit to growing crops. Fortunately, most of this precipitation falls as mountain snow which stays on the ground for months, melting later to sustain streamflow during the period of greatest demand during late spring and summer. Thus, nature provides in mountain snow an imposing water storage facility.

The amount of water stored in mountain snow varies from place to place as well as from year to year and accordingly, so does the runoff of the streams. The best seasonal management of variable western water supplies results from fore-knowledge of the runoff.

A snow survey consists of a series of about ten samples taken with specially designed snow sampling equipment along a permanently marked line, about 1000 feet in length, called a snow course. The use of snow sampling equipment provides snow depth and water equivalent values for each sampling point. The average of these values is reported as the snow survey measurement for a snow course.

Snow surveys are made monthly or semi-monthly beginning in January or February and continue through the snow season until April, May or June. Currently more than 1300 western snow courses are measured each year. These measurements furnish the key data for water supply forecasts.

By relating snow survey measurements taken over a period of years to spring-summer runoff during the same period, relationships have been developed which make it possible to forecast seasonal runoff several months in advance of occurrence. In order to make a forecast, once a forecast relationship has been developed, the maximum snow water content at previously selected key snow courses is usually entered in the forecast relationship. More accurate forecasts are often obtained when other factors such as soil moisture, base flow and spring precipitation are considered and included in the forecast relationships.

Listed below are the Federal-State-Private Cooperative Snow Survey and Water Supply Forecast reports available for the West which contain detailed information on snow survey measurements, streamflow forecasts, reservoir storage, soil moisture and other guide data to water management and conservation decisions.

### PUBLISHED BY SOIL CONSERVATION SERVICE

REPORTS RIVER BASINS	ISSUED	COOPERATING WITH	LOCATION
	MONTHLY (FEBMAY)	COLO. EXP. STATION COLO. STATE ENGINEER NEW MEXICO STATE ENGINEER	
		Nont.Agr.Exp.Station	
WEST-W10E	(OCT. 1, APR. 1 ANO MAY 1)	COOPERATORS	PORTLANO, OREGON
STATES			
ARIZONA		SALT R. VALLEY WATER	PHOENIX, ARIZONA
NE VA OA	MONTHLY (FEBAPR.)	NEVAOA STATE ENGINEER	RENO, NEVAOA
ORE GON	MONTHLY (JANMAY)	ORE.AGR.EXP.STATION	PORTLANO, OREGON
UTAH	Monthly (JanMay)	UTAH STATE ENGINEERUTAH AGR.EXP.STATION	SALT LAKE CITY, UTAH
WASHINGTON	MONTHLY (FEBMAY)	Wash. State Dept. OF Conservation	SPOKANE, WASHINGTON
WYOMING	Monthly (FEBJune).		CASPER, WYOMING

Copies of the various reports may be secured from: Head, Water Supply Forecasting Section Soil Conservation Service

209 S.W. 5th Avenue, Portland 4, Oregon

### PUBLISHED BY OTHER AGENCIES

OTHER SNOW SURVEY REPORTS			
BRITISH COLUMBIAMONTHLY			
	ANO FORESTS.	PARLIAMENT BLOGS. VICTORIA, B.C.	
CALIFORNIAMonthly		IA DEPARTMENT OF WATER RESOURCES,	

### FEDERAL-STATE COOPERATIVE SNOW SURVEYS AND WATER SUPPLY FORECASTS

For

### ARIZONA

(Salt, Verde, Gila and Part of Lower Colorado River Basin)

Issued

February 17, 1959

Report Prepared

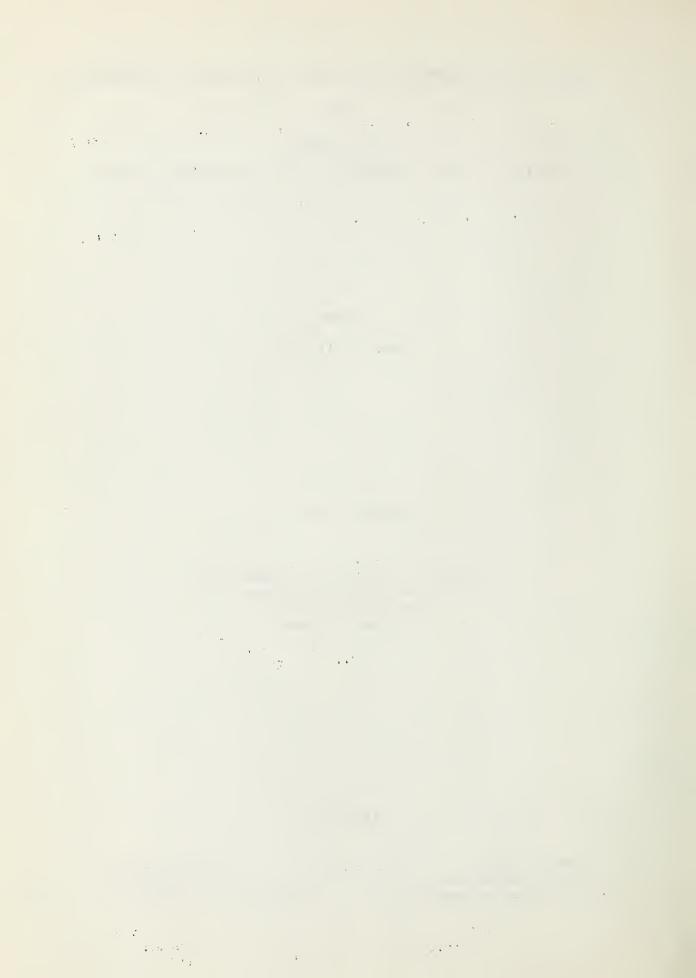
by

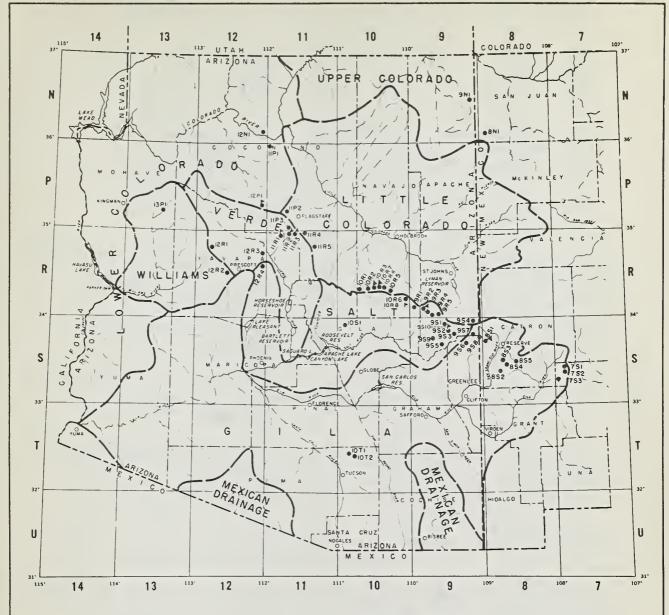
George Watt, Snow Survey Supervisor Soil Conservation Service Post Office Box 929 Phoenix, Arizona

Issued by

Robert V. Boyle
State Conservationist
Soil Conservation Service

Victor I. Corbell
President
Salt River Valley Water Users' Ass'n.





### LEGEND

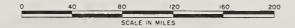
DRAINAGE BASIN BOUNDARY

13 U 12 SNOW COURSE

13U10 SNOW COURSE and SOIL MOISTURE STATION
13U8 SOIL MOISTURE STATION ONLY

# ARIZONA COOPERATIVE SNOW SURVEYS

SNOW COURSES AND DRAINAGE BASINS
JANUARY 1959



## INDEX to SNOW COURSES and SOIL MOISTURE STATIONS

NUMBER ***	NAME	SEC TW	P RGE HHH	ELEVATION	RIVER BASIN
11P3 9S1 10T1 9S6 9S3	Antelope Park Baldy (p) Bear Wallow Beaver Head Big Lake Knoll	6 12	N 27E S 16E	7300 9125 8100 8000 8800	VerdeDiscontinued Salt-Little Colorado Gila Salt-Frisco Salt-Frisco-Little Colorado Discontinued
12N1 12R1	Black Canyon Black River Divide Bright Angel Camp Wood Canyon Creek	11 6 34 33 3 16	N 3E	6790 9100 8400 5700 7500	Gila Salt-Little Colorado Lower Colorado Williams-Verde Salt-Little ColoradoReplaced by 10R7-M
11R2-M 12P1-M	Canyon Creek #2 Casner Park Chalender Corduroy Creek La Corn Creek (p) La	19 18 27 22 t.34°07'	N 3E N. Long.110°	7500 6930 7100 08 W. § 6000 45 W. § 7730	Salt-Little Colorado Verde Verde Salt Salt Not Read
8S3 9S7 1OR2 1OR6 11P2	Corner Mountain Coronado Trail Elk Forest Dale Fort Valley	26 5 31 11	S 17W**** N 30E N 14E N 21E N 6E	8850 8000 7600 6430 7350	Gila-Frisco Not Read Salt-Frisco Salt-Little ColoradoDiscontinued Salt-Little Colorado Verde-Little Colorado
9R5 8S1-M 12R4 10R5 11P1	Ft. Apache Frisco Divide Gaddes Canyon Gentry Grand Canyon	31 6 11 15	N 2E N 15E	9160 8000 7600 7600 7500	Salt-Little Colorado Frisco-Gila Verde-Agua Fria Salt Lower Colorado
11R5 10R4 7S2 12R2 9S2	Happy Jack Heber (p) Inman Iron Springs Maverick Fork (p)	6 11 22 11	N 15E S 10W***	7630 7600 7800 6200 9050	Verde Salt-Little Colorado Gila Williams-Verde Salt
9R4 9R2-M 9R1 12R3 8S2	McKay Peak McNary Milk Ranch Mingus Mountain Mogollon	14 8		8250 7200 7000 7100 7000	Salt Not Read Salt-Little Colorado Salt Verde-Agua Fria Frisco-Gila
	Mormon Lake Mormon Mountain Munds Park N-Bar Lake Negrito	13 18 14 18 7 18 16 10 6 10	N 8E N 7E S 17W****	7350 7500 6500 8600 8200	Verde-Little Colorado Verde Verde Gila Not Read Gila Not Read
954 955 9N1 10T2 9S8	Nutrioso Pacheta At Roof Butte Rose Canyon State Line	Town of 15 8 15 12	N 30E Maverick, A N 6W**** S 16E S 21W****	8500 riz <b>.§</b> 7800 8500 7300 8000	Salt-Frisco-Little Colorado Salt Little Colorado Not Read Gila Gila-Frisco
7S1 9R3 8N1 13P1 10R1	Taylor Creek Trout Creek Washington Pass L Willow Ranch Woods Canyon		N 24E 'N. Long.108 N 11W	7850 6400 °50'W \\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\	Gila Salt Not Read Little ColoradoNot Read Williams Salt=Little Colorado Discontinued
1081	Workman Creek	33 6	n 14E	6900	Salt

<sup>\*</sup> Soil Moisture Station only.

 $<sup>*\!*\!*\!*\!*</sup>$  All in Gila and Salt River Base and Meridian except where otherwise indicated.

<sup>\*\*\*\*</sup> New Mexico Principal Meridian

<sup>\*\*\*\*\*</sup> Navajo Base

M= Soil Moisture Station installed on or in vicinity of snow course.

<sup>§ =</sup> Unsurveyed

<sup>(</sup>p)= Storage gage installed on or in vicinity of snow course.

#### ARIZONA WATER SUPPLY OUTLOOK

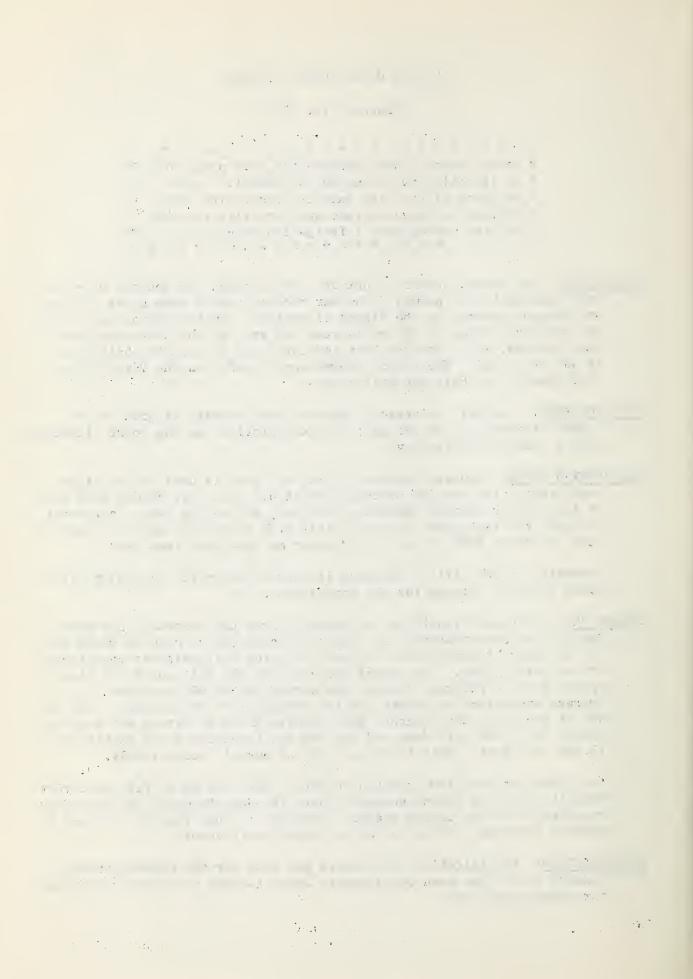
### February 15, 1959

- SNOW COVER: The recent storms in Arizona have brought the general average snow pack to 60% of normal. The per cent of normal snow cover is lower on the snow courses at the higher elevations. In the Mormon Lake area the snow pack is about 50% of average and snow on the White Mountain snow courses, which are the best indicators to flow in the Salt River, is 40% of normal. The recent storms were heavier on the Verde Watershed than on the Salt and Gila Rivers.
- SOIL MOISTURE: The soil moisture in the mountain forests is good at the higher elevations, but the soil moisture stations at the lower elevations show a moisture deficiency.
- RESERVOIRED WATER: Storage increase during the past 15 days in the eight major reservoirs serving central Arizona has been only 30,000 acre feet, or 3% of their present capacity. However, due to the large carry-over storage from last year, they are still 112% of average for this time of year and about 200% of the stored water at this date last year.
  - Generally, there will be adequate irrigation water for the major irrigated areas in Arizona for the coming year.
- Most of the snow measured was from the recent storm, much of which was on the lower elevation snow courses where the soil moisture conditions are relatively dry. The runoff forecast for the Salt and Verde Rivers system for the February through May period is 235,000 acre feet, if average precipitation occurs for the remainder of the season. This is 40% of average. The forecast for the Gila River at Virden for the same period is 17,000 acre feet and for the San Francisco River at Clifton 13,000 acre feet. This is 28% and 25% of normal, respectively.

The effect of this low expected runoff is more apt to be felt next year than it will this coming season. There is adequate water in storage in most areas for the coming season. However, if this year is followed by another dry year, serious water shortages could occur.

PRECIPITATION: Precipitation for January and also for the October through

January period has been considerably below average for almost all areas
throughout the State.



## STREAM FLOW FORECASTS - FEBRUARY 15, 1959

The following summarized runoff forecasts are based principally on mountain snow cover and on the assumption that precipitation and temperature will be near average from the present time to the end of the forecast period. Appreciable deviations from normal of temperature and/or precipitation will correspondingly modify these forecasts.

		L STREAM CAST PER			ANDS OF - MAY IN	ACRE FEET
BASIN, STREAM AND STATION	Forecast Runoff 1959	Percent 15-Year Average	Meas 1958	ured Ru 1957	noff 1956	1938-52 Average
Salt River at Intake	120.0	37	567.3	166.8	127.5	327.1
Tonto River above Roosevelt	15.0	35	81.2	36.8	9.0	$42.6 \frac{1}{}$
Verde River above Horseshoe	100.0	45	295.0	184.6	44.9	222.0
Gila River at Virden	17.0	28	150.2	13.0	10.8	59.9
Frisco River at Clifton	13.0	25	192.1	15.7	10.2	51.7
Little Colorado River above Lyman Dam 2/	1.2	13	22.1	1.5	2.9	9.1 1/

<sup>1/</sup> Average is for less than 15 years of record in the 1938-52 period.

<sup>2/</sup> Forecast period for Little Colorado River above Lyman Dam is for February-June inclusive.

STATUS OF ARIZONA RESERVOIR STORAGE - FEBRUARY 15, 1959

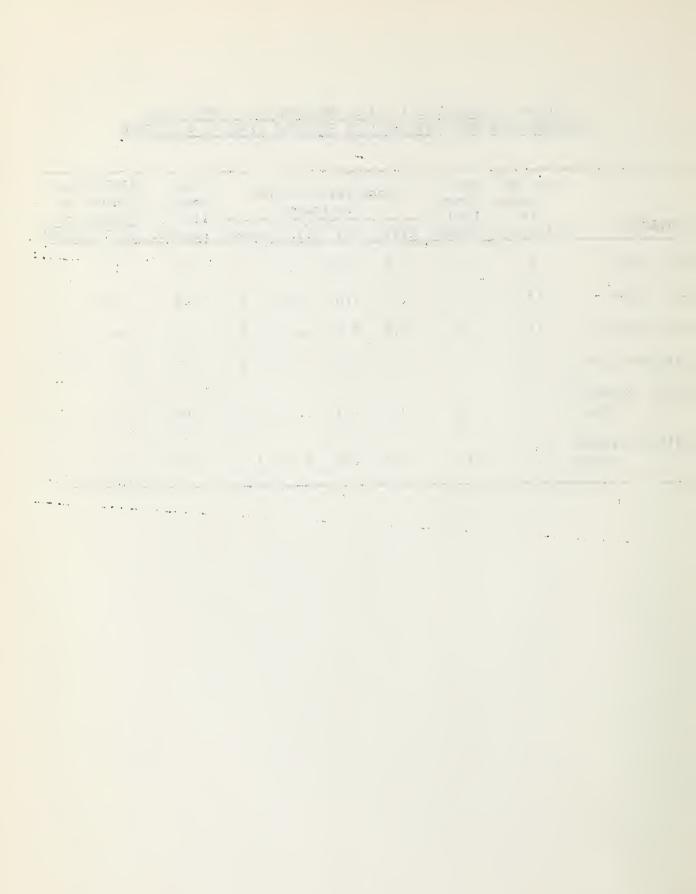
BASIN		USABLE	USABLE	STORAGE -	1000 ACRE	FEET 15-Year			
and/or STREAM	RESERVOIR	CAPACITY 1000s AF	1959	1958	1957	Average 1938-52			
	GILA DRAINAGE								
Agua Fria	Lake Pleasant	163.8	18.3	12.0	22.3	$21.9^{\frac{1}{2}}$			
Gila	San Carlos	1,205.0	108.6	59.8	9.5	175.9			
Verde	Bartlett	180.0	101.4	129.1	113.9	55.0 1/			
Verde	Horseshoe	143.0	13.7	2.1	30.8	$14.1^{\frac{1}{2}}$			
Salt	Roosevelt	1,381.6	445.7	43.8	141.3	420.7			
Salt	Apache	245.1	236.9	219.5	97.2	185.5			
Salt	Canyon	57.8	56.1	51.9	50.8	34.0			
Salt	Saguaro	69.8	66.0	60.5	56.2	23.1			
	LO	JER COLORA	DO DRAINAG	E					
Colorado	Lake Havasu	619.4	536.4	= 549.9	607.9	555.6 1/			
Colorado	Lake Mohave	1,810.0	1,676.9	1,677.0	1,711.0	1,065.5 1/			
Colorado	Lake Mead	27,207.0	21,339.0	19,848.0	11,686.0	19,131.0			
Little Colorado	Lyman	30.6	18.5	8.2	0.0	8.1 1/			
Little Colorado	Show Low Lake	5.1	0.1	0.1	0.5	~~*			

<sup>1/</sup> Average is for less than 15 years of record in the 1938-52 period.



# SUMMARY OF FEBRUARY 15, 1959 ARIZONA SNOW SURVEYS AND COMPARISON OF DATA WITH THAT OF PREVIOUS YEARS BY WATERSHED

	No. of Courses	Snow Depth 1959	Snow Water Content in Inches				Snow Density 1959	1959 Water Content in Percent of	
WATERSHED	Average	Inches	1959	1958	1957	Normal	Percent	1958	Normal
Gila River	8	5	1.1	0.9	0.0	1.8	22	122	61
Salt River	12	9	1.7	1.8	2.0	3.2	19	94	53
Verde River	11	14	2.8	0.6	2.7	2.6	20	467	108
Williams River	3	9	2.1	0.0	0.6	0.8	23		. 263
Lower Colorado River	3	15	2.4	1.3	1.3	2.6	16	185	92
Little Colorado River	11	12	2.2	1.4	2.8	3.3	18	157	67

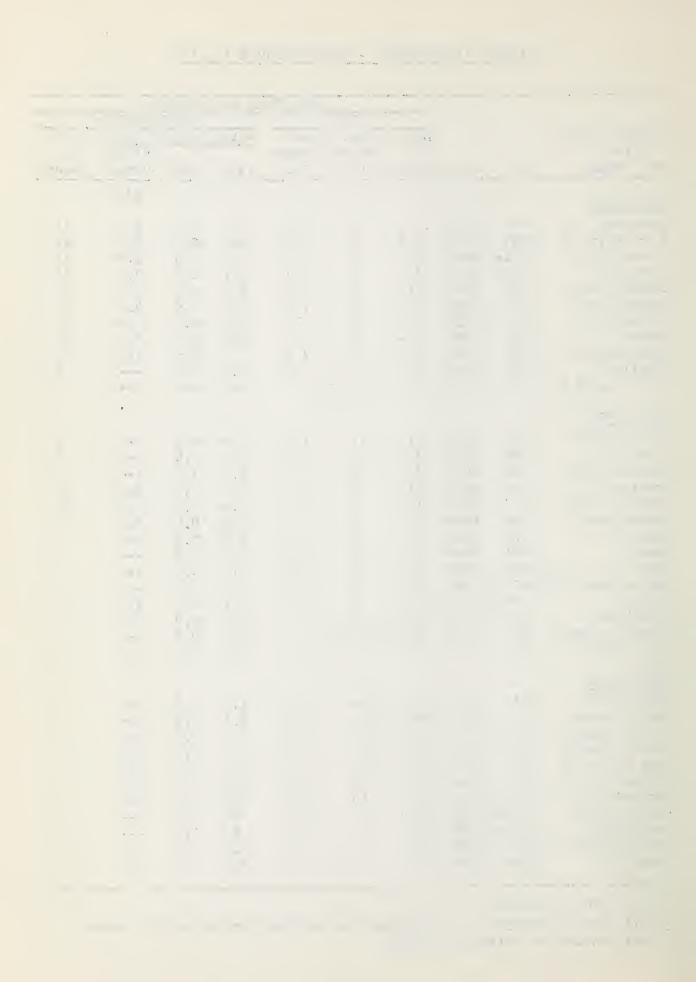


					SNOW COV	ER MEA			
				1959			PAS	T RECORD	
DRAINAGE BASIN			Date	Snow	Water	Water	Conte	nt (In.)	Prior
and			of	Depth	Content			1938-52	Yrs. of
SNOW COURSE	No.	Elev.	Survey	(In,)	(In.)	1958	1957	Average	Record
GILA RIVER								<u>2</u> /	
Nutrioso	984	8500	2/14	5	0.6	0.6	0.0	2.5	19
Bear Wallow 3/	10T1	8100	2/13	8	1.9	0.4	0.0	2.3	11
Frisco Divide	8S1-M	8000	2/13	7	2.2	1.6	0.0	2.0	19
State Line	988	8000	2/13	9	2.0	2.1	0.0	2.9	19
Coronado Trail	987	8000	2/14	6	0.8	0.8	0.0	3.9	19
Beaver Head	986	8000	2/14	8	1.0	0.9	0.0	3.1	17
Taylor Creek	781	7850	2/14	Ŧ	T	0.0	0.0	0.6	14
Inman	752	7800	2/14	T	T	0.0	0.0	0.9	10
Rose Canyon 3/	10T2	7300	2/13	7	2.0	T	0.0	1.2	11
Mogollon	8S 2	7000	2/14	5	1.8	0.8	0.0		6
Black Canyon 3/	783	6790	Report						4
SALT RIVER									
DALL KIVEK	00.5	0160	0101				, -		•
Ft. Apache 1/	9R5	9160	2/14	17	3.5	4.5	4.5		7
Baldy 1/	981	9125	2/14	11	2.6	4.7	4.6		9
Maverick Fork	9\$2	9050	2/14	10	1.6	6.0	7.7		9
Nutrioso	984	8500	2/14	5	0.6	0.6	0.0	2.5	19
Coronado Trail	987	8000	2/14	6	0.8	8.0	0.0	3.9	19
Beaver Head	986	8000	2/14	8	1.0	0.9	0.0	3.1	17
Pacheta	985	7800	2/14	7	1.4	2.0	0.0		8
Gentry	10R5	7600	2/13	15	3.2	T	2.8		8
	/10R4	7600	2/13	15	2.8	T	4.2		8
Canyon Creek #2	10R7-M		2/13	15	2.4	T	-		1
McNary	9R2-M		2/13	7	1.2	1.2	0.0	2.6	19
Milk Ranch 3/	9R1	7000	2/13	6	1.0	0.3	0.0	1.4	18
Workman Creek	1081	6900	Report	_		0.0	0.8		7
Forest Dale	10R6	6430	2/13	5	1.0	0.0	0.0	1.0	19
VERDE RIVER									
Happy Jack	11R5	7630	2/14	14	2.2	1.3	2.2		7
Gaddes Canyon	12R4	7600	2/13	16	4.1	2.3	3.5		5
Mormon Mountain	11R3-M		2/12	14	2.5	1.7	6.9	***	8
Mormon Lake	11R4	7350	2/12	11	2.4	T	5.1	6.6	11
Fort Valley 1/	11P2	7350	2/13	17	2.7	0.9	0.3	3.4	12
Mingus Mountain	12R3	7100	2/13	10	2.5	0.0	T	2.0	12
Chalender	12P1-M		2/13	18	3.0	0.9	1.8	3.9	12
Casner Park	11R2-M		2/12	13	2.4	T	5.0	J. J	8
Munds Park	11R1-M		2/12	12	2.4	T	3.1		8
Iron Springs 1/	12R2	6200	2/12	14	2.5	0.0	1.9	1.8	13
Camp Wood	12R1	5700	2/14	12	3.8	0.0	0.0	1.3	13
	****	3,00	G/ 14	1.4	3.0	0.0	0.0	1.0	

<sup>1/</sup> On adjacent drainage.

<sup>2/</sup> All 1938-52 averages are estimated from existing records within period.

<sup>3/</sup> Not included in watershed averages.



# ARIZONA SNOW SURVEYS - ABOUT FEBRUARY 15, 1959

				SI	NOW COVER	MEASU	REMENT	S	
				1959				RECORD	
DRAINAGE BASIN			Date	Snow	Water	Water	Conte	nt (In.)	Prior
and			of		Content			1938-52	Yrs. of
SNOW COURSE	No.	Elev.	Survey	(In.)	(In,)	1958	1957	Average	Record
								2/	
WILLIAMS RIVER									
Iron Springs	12R2	6200	2/11	14	2.5	0.0	1.9	1.8	13
Camp Wood 1/	12R1	5700	2/14	12	3.8	0.0	0.0	1.3	13
Willow Ranch	13P1	5000	2/13	T	T	0.0	0.0	0.8	11
LOWER COLORADO R	IVER								
Bright Angel 3/	12N1	8400	No Sur	vev			11.6	9.1	11
Grand Canyon	11P1 '	7500	2/14	9	1.6	2.0	1.7	3.2	11
Fort Valley,	11P2	7350	2/13	17	2.7	0.9	0.3	3.4	12
Chalender 1/	12P1-M		2/13	18	3.0	0.9	1.8	3.9	12
LITTLE COLORADO	RIVER								
Ft. Apache	9R5	9160	2/14	17	3.5	4.5	4.5		7
Baldy	981	9125	2/14	11	2.6	4.7	4.6		9
Nutrioso	984	8500	2/14	5	0.6	0.6	0.0	2.5	19
Happy Jack 1/	11R5	7630	2/14	14	2.2	1.3	2.2		7
Gentry	10R5	7600	2/13	15	3.2	T	2.8		8
	/10R4	7600	2/13	15	2.8	T	4.2		8
Canyon Creek #2		7500	2/13	15	2.4	T			1
Mormon Mountain	11R3-M	7500	2/12	14	2.5	1.7	6.9		8
Mormon Lake	11R4	7350	2/12	11	2.4	T	5.1	6.6	11
Fort Valley	11P2	7350	2/13	17	2.7	0.9	0.3	3.4	12
MeNary	9R2-M		2/13	7	1.2	1.2	0.0	2.6	19
Forest Dale	10R6	6430	2/13	5	1.0	0.0	0.0	1.0	19

<sup>1/</sup> On adjacent drainage.

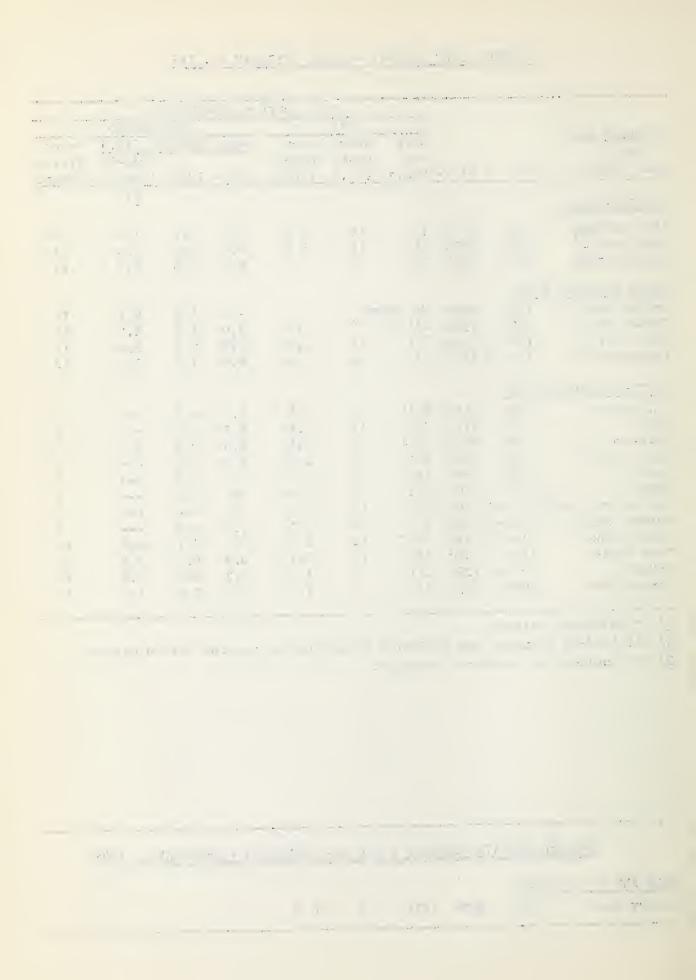
# DELAYED REPORTS RECEIVED SINCE LAST BULLETIN - FEBRUARY 1, 1959

# GTLA AND SALT RIVERS

Beaver Head 986 8000 1/31 0 0.0

<sup>2/</sup> All 1938-52 averages are estimated from existing records within period.

<sup>3/</sup> Not included in watershed averages.



PRECIPITATION AT SELECTED ARIZONA STATIONS 1/

	Precipitation (Inches)								
			Current Water Year						
	Ja	nuary - 1959	(Oct. 1	958 - Jan. 1959)					
STATION	M-4-1	Departure from	Man - 1	Departure from					
SIATION	Total	long term mean	Total	long term mean					
Ash Fork	.16	84	2.70	86					
Clifton	0	~ .89	2.60	57					
Douglas Smelter	0	69	1.76	71					
Flagstaff WBAS 2/	. 34	- 1.35	2.59	- 3.31					
Grand Canyon Hq.	.29	- 1.09	2.02	- 2.48					
Parker	.12	45	.66	- 1.05					
Payson Ranger Station	.56	- 1.47	3.50	- 3.02					
Phoenix WBAS 2/	.23	37	.89	- 1.55					
Prescott WBAS 2/	. 25	85	1.27	- 2.50					
Springerville	.85	÷ .13	2.74	+ .44					
Tucson WBAS 2/	.03	60	2.31	49					
Winslow WBAS 2/	.09	28	.78	- 1.10					
Yuma WBAS 2/	.02	31	.67	67					

<sup>1/</sup> Data and Analysis furnished by Paul C. Kangieser, Arizona State Climatologist, U. S. Weather Bureau, Phoenix, Arizona.

<sup>2/</sup> WBAS = Weather Bureau Airport Station.

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# AVAILABLE SOIL MOISTURE - ABOUT FEBRUARY 15, 1959

			PRO	FILE	SOIL MOISTURE			
			Depth	Available Capacity	in	Inches		
STATION	No.	Elevation	(In.)	(In.)	1959	1958	1957	
		SALT RIVER	DRAINA	GE				
Black River Divide	9510	9100	48	8.2	7.8	8.1	0.0	
Canyon Creek #2	10R7-M	7500	48	8.5	8.4	8.3		
McNary	9R2-M	7200	48	8.0	4.2	3.9	8.0	
Corduroy Creek	10R8	6000	48	8.0	0.0	2.1	5.9	
		VERDE RIVE	R DRAIN	AGE				
Mormon Mountain	11R3-M	7500	48	8.3	6.8	7.0	8.2	
Chalender	12P1-M	7100	48	8.3	0.0	4.2	2.1	
Casner Park	11R2-M	6950	48	8.7	6.4	6.7	8,4	
Munds Park	11R1-M	6500	48	9.0	12.5	8.4	8.5	

47 11 1

## LIST OF SNOW SURVEYORS

SNOW COURSE	SURVEYOR
Baldy	SCS and SRVWUA
Bear Wallow	Forest Service - W. D. Nelson
Beaver Head	N. A. Josh
Black Canyon	Wayne Black
Bright Angel	National Park Service
Camp Wood	Mrs. C. C. Merritt
Canyon Creek #2	SCS and SRVWUA
Casner Park	SCS and SRVWUA
Chalender	Forest Service - M. C. Oleson & F. E. Page
Coronado Trail	Forest Service - Bill Brainard
Forest Dale	Fort Apache Reservation - Valverde & Endfield
Frisco Divide	Forest Service - Frank Carroll
Ft. Apache	SCS and SRVWUA
Fort Valley	Rocky Mt. Forest & Range Experiment Station
Gaddes Canyon	SCS - Richard Enz
Gentry	SCS and SRVWUA
Grand Canyon	National Park Service - Vincent Hefti
Happy Jack	Julius Brantley
Heber	SCS and SRVWUA
Inman	C. H. McCauley
Iron Springs	Ernest Saxby
McNary	Fort Apache Reservation - Valverde & Endfield
Maverick Fork	SCS and SRVWUA
Milk Ranch	Fort Apache Reservation - Valverde & Endfield
Mingus Mountain	SCS - Richard Enz
Mogollon	J. R. Wray
Mormon Lake	SCS and SRVWUA
Mormon Mountain	SCS and SRVWUA
Munds Park	SCS and SRVWUA
Nutrioso	Forest Service - Bill Brainard
Pacheta	Foch Phillips
Rose Canyon	Forest Service - W. D. Nelson
State Line	Forest Service - Frank Carroll
Taylor Creek	C. H. McCauley
Willow Ranch	Tiny Miller
Workman Creek	Rocky Mt. Forest & Range Experiment Station

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# The Following Organizations Cooperate in the Arizona Snow Survey Work

#### FEDERAL

Department of Agriculture

Soil Conservation Service

Forest Service
Apache Forest
Coconino Forest
Coronado Forest
Gila Forest
Kaibab Forest
Prescott Forest

Rocky Mountain Forest and Range Experiment Station

Department of Commerce Weather Bureau Arizona Section

Department of Interior

Bureau of Reclamation Region III

Geological Survey Arizona District

Bureau of Indian Affairs
Fort Apache Reservation

National Park Service
Grand Canyon National Park

Gila Water Commissioner Safford, Arizona

#### IRRIGATION PROJECTS

Salt River Valley Water Users' Association Phoenix, Arizona

San Carlos Irrigation and Drainage District Coolidge, Arizona

#### PRIVATE

Southwest Lumber Mills, Inc. McNary, Arizona

Other organizations and individuals furnish valuable information for the snow survey reports. Their cooperation is gratefully acknowledged.



Furnishes the basic data necessary for forecasting water supply for irrigation, domestic and municipal water supply, hydro-electric power generation, navigation, mining and industry

"The Conservation of Water begins with the Snow Survey"